#6
9/25/01
16:52

RAW SEQUENCE LISTING DATE: 09/25/2001
PATENT APPLICATION: US/09/583,310 TIME: 09:31:48

Input Set : A:\16663-11.app
Output Set: N:\CRF3\09252001\I583310.raw

3 <110> APPLICANT: Cashman, John R.
4   Lomri, Noureddine
6 <120> TITLE OF INVENTION: DNA SEQUENCE ENCODING FLAVIN-CONTAINING MONOOXYGENASE
8 <130> FILE REFERENCE: 16663-1-2
10 <140> CURRENT APPLICATION NUMBER: 09/583,310
11 <141> CURRENT FILING DATE: 2000-05-30
13 <150> PRIOR APPLICATION NUMBER: 08/617,671
14 <151> PRIOR FILING DATE: 1996-03-27   **ENTERED**
16 <150> PRIOR APPLICATION NUMBER: 08/023,843
17 <151> PRIOR FILING DATE: 1993-02-26
19 <160> NUMBER OF SEQ ID NOS: 18
21 <170> SOFTWARE: PatentIn Ver. 2.1
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24 <211> LENGTH: 32
25 <212> TYPE: DNA
26 <213> ORGANISM: Artificial Sequence
28 <220> FEATURE:
29 <223> OTHER INFORMATION: Description of Artificial Sequence: cDNA probe
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50 <211> LENGTH: 27
51 <212> TYPE: DNA
52 <213> ORGANISM: Artificial Sequence
54 <220> FEATURE:
55 <223> OTHER INFORMATION: Description of Artificial Sequence: AflIII site of
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58 <400> SEQUENCE: 3
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62 <210> SEQ ID NO: 4
63 <211> LENGTH: 28
64 <212> TYPE: DNA
65 <213> ORGANISM: Artificial Sequence
67 <220> FEATURE:
68 <223> OTHER INFORMATION: Description of Artificial Sequence: Sal I site &
69   13 NT seq complementary to 3' end HLFMO-3 cDNA
71 <400> SEQUENCE: 4

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82 <222> LOCATION: (1)..(1599)
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87  1               5                  10                  15
89 tcc atc agg agc tgt ctg gaa gag ggg ctg gag ccc acc tgc ttt gag    96
90 Ser Ile Arg Ser Cys Leu Glu Glu Gly Leu Glu Pro Thr Cys Phe Glu
91              20                  25                  30
93 aag agc aat gac att ggg ggc ctg tgg aaa ttt tca gac cat gca gag   144
94 Lys Ser Asn Asp Ile Gly Gly Leu Trp Lys Phe Ser Asp His Ala Glu
95          35                  40                  45
97 gag ggc agg gct agc att tac aaa tca gtc ttt tcc aac tct tcc aaa   192
98 Glu Gly Arg Ala Ser Ile Tyr Lys Ser Val Phe Ser Asn Ser Ser Lys
99      50                  55                  60
101 gag atg atg tgt ttc cca gac ttc cca ttt ccc gat gac ttc ccc aac   240
102 Glu Met Met Cys Phe Pro Asp Phe Pro Phe Pro Asp Asp Phe Pro Asn
103  65                  70                  75                  80
105 ttt atg cac aac agc aag atc cag gaa tat atc att gca ttt gcc aaa   288
106 Phe Met His Asn Ser Lys Ile Gln Glu Tyr Ile Ile Ala Phe Ala Lys
107                  85                  90                  95
109 gaa aag aac ctc ctg aag tac ata caa ttt aag aca ttt gta tcc agt   336
110 Glu Lys Asn Leu Leu Lys Tyr Ile Gln Phe Lys Thr Phe Val Ser Ser
111              100                 105                 110
113 gta aat aaa cat cct gat ttt gca act act ggc cag tgg gat gtt acc   384
114 Val Asn Lys His Pro Asp Phe Ala Thr Thr Gly Gln Trp Asp Val Thr
115          115                 120                 125
117 act gaa agg gat ggt aaa aaa gaa tcg gct gtc ttt gat gct gta atg   432
118 Thr Glu Arg Asp Gly Lys Lys Glu Ser Ala Val Phe Asp Ala Val Met
119      130                 135                 140
121 gtt tgt tcc gga cat cat gtg tat ccc aac cta cca aaa aag tcc ttt   480
122 Val Cys Ser Gly His His Val Tyr Pro Asn Leu Pro Lys Lys Ser Phe
123 145                 150                 155                 160
125 cca gga cta aac cac ttt aaa ggc aaa tgc ttc cac agc agg gac tat   528
126 Pro Gly Leu Asn His Phe Lys Gly Lys Cys Phe His Ser Arg Asp Tyr
127                  165                 170                 175
129 aaa gaa cca ggt gta ttc aat gga aag cgt gtc ctg gtg gtt ggc ctg   576
130 Lys Glu Pro Gly Val Phe Asn Gly Lys Arg Val Leu Val Val Gly Leu
131              180                 185                 190
133 ggg aat tcg ggc tgt gat att gcc aca gaa ctc agc cgc aca gca gaa   624
134 Gly Asn Ser Gly Cys Asp Ile Ala Thr Glu Leu Ser Arg Thr Ala Glu
135              195                 200                 205
137 cag gtc atg atc agt tcc aga agt ggc tcc tgg gtg atg agc cgg gtc   672
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138 Gln Val Met Ile Ser Ser Arg Ser Gly Ser Trp Val Met Ser Arg Val
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142 Trp Asp Asn Gly Tyr Pro Trp Asp Met Leu Leu Val Thr Arg Phe Gly
143 225             230             235             240
145 acc ttc ctc aag aac aat tta ccg aca gcc atc tct gac tgg ttg tac   768
146 Thr Phe Leu Lys Asn Asn Leu Pro Thr Ala Ile Ser Asp Trp Leu Tyr
147             245             250             255
149 gtg aag cag atg aat gca aga ttc aag cat gaa aac tat ggc ttg atg   816
150 Val Lys Gln Met Asn Ala Arg Phe Lys His Glu Asn Tyr Gly Leu Met
151             260             265             270
153 cct tta aat gga gtc ctg agg aaa gag cct gta ttt aac gat gag ctc   864
154 Pro Leu Asn Gly Val Leu Arg Lys Glu Pro Val Phe Asn Asp Glu Leu
155         275             280             285
157 cca gca agc att ctg tgt ggc att gtg tcc gta aag cct aac gtg aag   912
158 Pro Ala Ser Ile Leu Cys Gly Ile Val Ser Val Lys Pro Asn Val Lys
159     290             295             300
161 gaa ttc aca gag acc tcg gcc att ttt gag gat ggg acc ata ttt gag   960
162 Glu Phe Thr Glu Thr Ser Ala Ile Phe Glu Asp Gly Thr Ile Phe Glu
163 305             310             315             320
165 ggc att gac tgt gta atc ttt gca aca ggg tat agt ttt gcc tac ccc   1008
166 Gly Ile Asp Cys Val Ile Phe Ala Thr Gly Tyr Ser Phe Ala Tyr Pro
167             325             330             335
169 ttc ctt gat gag tct atc atc aaa agc aga aac aat gag atc att tta   1056
170 Phe Leu Asp Glu Ser Ile Ile Lys Ser Arg Asn Asn Glu Ile Ile Leu
171             340             345             350
173 ttt aaa gga gta ttt cct cct cta ctt gag aag tca acc ata gca gtg   1104
174 Phe Lys Gly Val Phe Pro Pro Leu Leu Glu Lys Ser Thr Ile Ala Val
175         355             360             365
177 att ggc ttt gtc cag tcc ctt ggg gct gcc att ccc aca gtt gac ctc   1152
178 Ile Gly Phe Val Gln Ser Leu Gly Ala Ala Ile Pro Thr Val Asp Leu
179     370             375             380
181 cag tcc cgc tgg gca gca caa gta ata aag gga act tgt act ttg cct   1200
182 Gln Ser Arg Trp Ala Ala Gln Val Ile Lys Gly Thr Cys Thr Leu Pro
183 385             390             395             400
185 tct atg gaa gac atg atg aat gat att aat gag aaa atg gag aaa aag   1248
186 Ser Met Glu Asp Met Met Asn Asp Ile Asn Glu Lys Met Glu Lys Lys
187             405             410             415
189 cgc aaa tgg ttt ggc aaa agc gag acc ata cag aca gat tac att gtt   1296
190 Arg Lys Trp Phe Gly Lys Ser Glu Thr Ile Gln Thr Asp Tyr Ile Val
191             420             425             430
193 tat atg gat gaa ctc tcc tcc ttc att ggg gca aag ccc aac atc cca   1344
194 Tyr Met Asp Glu Leu Ser Ser Phe Ile Gly Ala Lys Pro Asn Ile Pro
195             435             440             445
197 tgg ctg ttt ctc aca gat ccc aaa ttg gcc atg gaa gtt tat ttt ggc   1392
198 Trp Leu Phe Leu Thr Asp Pro Lys Leu Ala Met Glu Val Tyr Phe Gly
199     450             455             460
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209 atg cag aca cga gtg gtc ggg aga ctt cag aag cct tgc ttc ttt ttc     1536
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211           500                     505                     510
213 cat tgg ctg aag ctc ttt gca att cct att ctg tta atc gct gtt ttc     1584
214 His Trp Leu Lys Leu Phe Ala Ile Pro Ile Leu Leu Ile Ala Val Phe
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231           20                      25                      30
232 Lys Ser Asn Asp Ile Gly Gly Leu Trp Lys Phe Ser Asp His Ala Glu
233           35                      40                      45
234 Glu Gly Arg Ala Ser Ile Tyr Lys Ser Val Phe Ser Asn Ser Ser Lys
235       50                      55                      60
236 Glu Met Met Cys Phe Pro Asp Phe Pro Phe Pro Asp Asp Phe Pro Asn
237  65                      70                      75                  80
238 Phe Met His Asn Ser Lys Ile Gln Glu Tyr Ile Ile Ala Phe Ala Lys
239               85                      90                      95
240 Glu Lys Asn Leu Leu Lys Tyr Ile Gln Phe Lys Thr Phe Val Ser Ser
241           100                     105                     110
242 Val Asn Lys His Pro Asp Phe Ala Thr Thr Gly Gln Trp Asp Val Thr
243           115                     120                     125
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245       130                     135                     140
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247 145                     150                     155                 160
248 Pro Gly Leu Asn His Phe Lys Gly Lys Cys Phe His Ser Arg Asp Tyr
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250 Lys Glu Pro Gly Val Phe Asn Gly Lys Arg Val Leu Val Val Gly Leu
251           180                     185                     190
252 Gly Asn Ser Gly Cys Asp Ile Ala Thr Glu Leu Ser Arg Thr Ala Glu
253           195                     200                     205
254 Gln Val Met Ile Ser Ser Arg Ser Gly Ser Trp Val Met Ser Arg Val
255       210                     215                     220
256 Trp Asp Asn Gly Tyr Pro Trp Asp Met Leu Leu Val Thr Arg Phe Gly
257 225                     230                     235                 240
258 Thr Phe Leu Lys Asn Asn Leu Pro Thr Ala Ile Ser Asp Trp Leu Tyr
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259                  245                  250                  255
260 Val Lys Gln Met Asn Ala Arg Phe Lys His Glu Asn Tyr Gly Leu Met
261             260                  265                  270
262 Pro Leu Asn Gly Val Leu Arg Lys Glu Pro Val Phe Asn Asp Glu Leu
263         275                  280                  285
264 Pro Ala Ser Ile Leu Cys Gly Ile Val Ser Val Lys Pro Asn Val Lys
265     290                  295                  300
266 Glu Phe Thr Glu Thr Ser Ala Ile Phe Glu Asp Gly Thr Ile Phe Glu
267 305                  310                  315                  320
268 Gly Ile Asp Cys Val Ile Phe Ala Thr Gly Tyr Ser Phe Ala Tyr Pro
269             325                  330                  335
270 Phe Leu Asp Glu Ser Ile Ile Lys Ser Arg Asn Asn Glu Ile Ile Leu
271         340                  345                  350
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273         355                  360                  365
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275     370                  375                  380
276 Gln Ser Arg Trp Ala Ala Gln Val Ile Lys Gly Thr Cys Thr Leu Pro
277 385                  390                  395                  400
278 Ser Met Glu Asp Met Met Asn Asp Ile Asn Glu Lys Met Glu Lys Lys
279             405                  410                  415
280 Arg Lys Trp Phe Gly Lys Ser Glu Thr Ile Gln Thr Asp Tyr Ile Val
281         420                  425                  430
282 Tyr Met Asp Glu Leu Ser Ser Phe Ile Gly Ala Lys Pro Asn Ile Pro
283         435                  440                  445
284 Trp Leu Phe Leu Thr Asp Pro Lys Leu Ala Met Glu Val Tyr Phe Gly
285     450                  455                  460
286 Pro Cys Ser Pro Tyr Gln Phe Arg Leu Val Gly Pro Gly Gln Trp Pro
287 465                  470                  475                  480
288 Gly Ala Arg Asn Ala Ile Leu Thr Gln Trp Asp Arg Ser Leu Lys Pro
289             485                  490                  495
290 Met Gln Thr Arg Val Val Gly Arg Leu Gln Lys Pro Cys Phe Phe Phe
291         500                  505                  510
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295     530
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